



Injuries Among Massachusetts Residents, 2011

Injury Surveillance Program, Massachusetts Department of Public Health

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Injuries are a Major Public Health Problem in Massachusetts

Injuries are the *third* leading cause of death among Massachusetts residents and the *leading* cause of death among Massachusetts residents ages 1 to 44. In 2011, 3,072 Massachusetts residents died as a result of unintentional, self-inflicted or assault-related injuries (43.0 per 100,000¹). In addition, there were 74,361 hospital stays (1,024.2 per 100,000) and 717,689 emergency department (ED) visits (11,093.4 per 100,000) among MA residents associated with nonfatal injuries. (Figure 1). These figures do not include injuries which were only treated at home or in a physician's office.

What do we mean by “injury”?

In this report, “injury” includes unintentional injuries, sometimes called accidents, as well as self-inflicted and assault-related injuries. Besides penetrating and blunt forces, causes of injury include poisoning/overdoses, suffocation, foreign bodies and natural and environmental factors.

Report Contents

This report describes injuries to MA residents in 2011 that resulted in death or required treatment at a MA acute care hospital. Sections include:

- **Leading Causes of Injury**
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- **Injury Costs**
- **Injuries by Age Group**
- **Injury Prevention in Massachusetts**

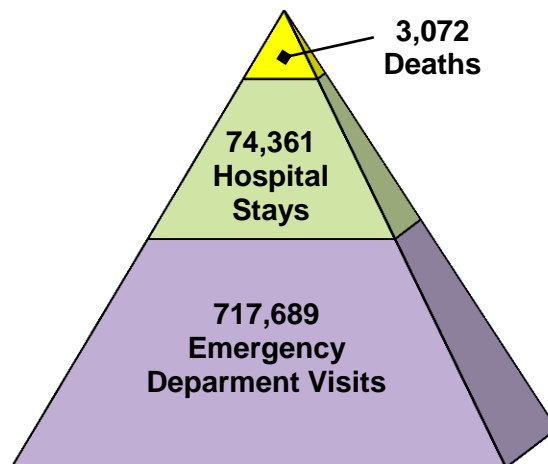


Figure 1. Total Burden of Injuries, MA Residents, 2011²

Injury Costs

While the emotional and physical suffering caused by injuries cannot be measured, costs that can be estimated provide additional indicators of the burden of injury in Massachusetts.

- Injury deaths among MA residents in 2011 resulted in an estimated 52,772 years of potential life lost (YPLL) prior to age 65 (CDC WISQARS).
- 2011 injury deaths in MA were further associated with an estimated \$3.3 billion in lifetime work loss costs (CDC WISQARS).
- In 2011, MA residents incurred over \$3 billion in charges at MA acute care hospitals for injury-related hospital stays and ED visits, of which \$2.4 billion were associated with unintentional injuries.

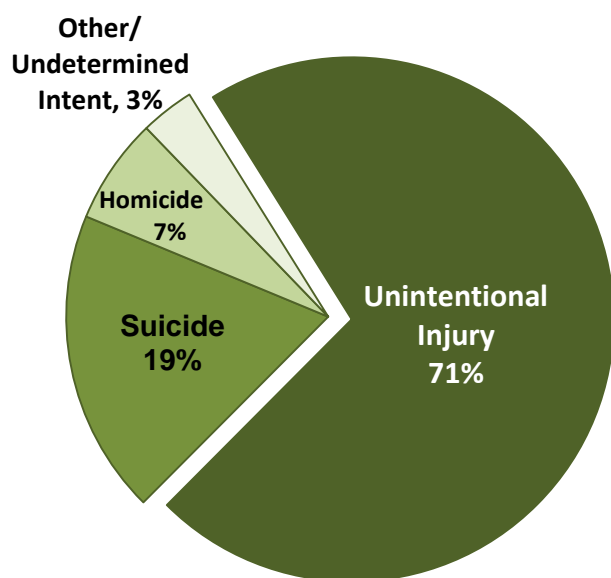
1. All rates are age-adjusted rates per 100,000 MA residents unless otherwise specified.

2. The MA Department of Public Health recently modified its method of identifying injury cases to align more closely with national standards. Therefore data from this report should not be compared with data in previous reports or the Registry of Vital Records and Statistics Death Report 2011. See notes on page 14 for complete injury definitions.



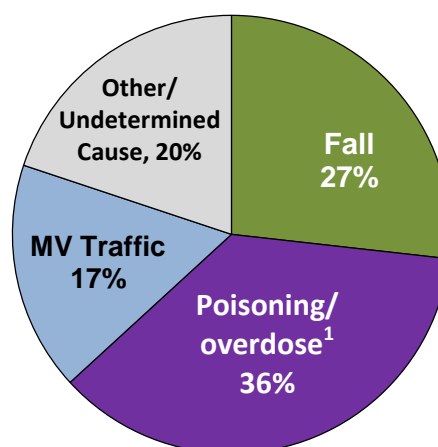
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Leading Causes of Injury Death



Injury Deaths by Intent
(n = 3,072)

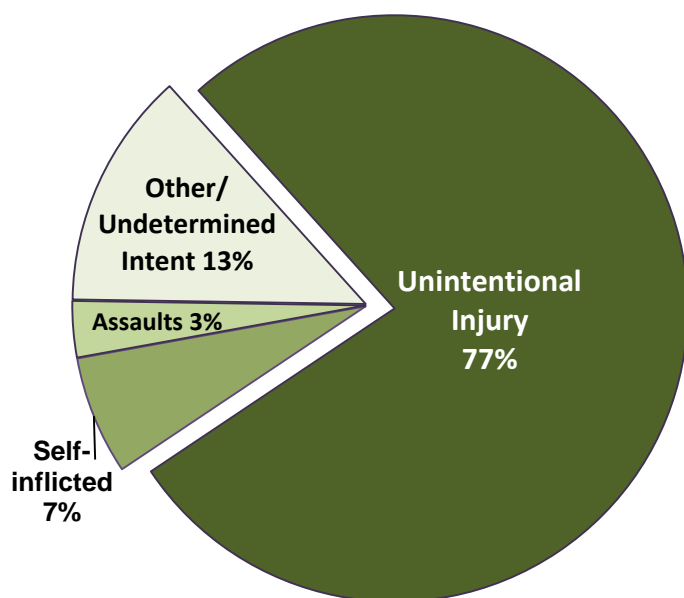
- Unintentional injuries accounted for the majority (71%) of the 3,072 injury deaths of MA residents in 2011.



Unintentional Injury Deaths by Cause
(n = 2,192)

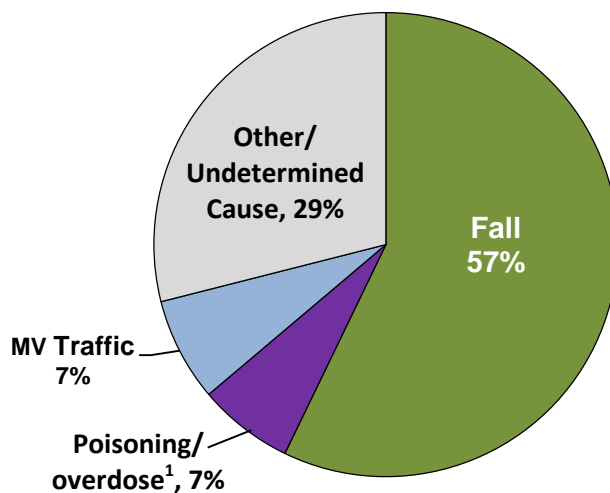
- The leading causes of the 2,192 unintentional injury deaths among MA residents in 2011 were poisoning/overdoses¹ (36%), falls (27%) and motor vehicle (MV) traffic-related injuries (17%).

Leading Causes of Injury-related Hospital Stays



Injury-related Hospital Stays by Intent
(n = 74,361)

- Unintentional injuries accounted for approximately three out of four (77%) of the 74,361 injury-related hospital stays of MA residents in 2011.



Unintentional Injury Hospital Stays by Cause
(n = 57,470)

- Falls accounted for the majority (57%) of hospital stays for unintentional injury in 2011. Of these 32,856 hospital stays, two-thirds (68%) involved MA adults ages 65 and older. (Data not shown.)

1. Unintentional poisoning/overdoses only. Does not include intentional poisoning/overdoses or those of undetermined intent.



Injuries Among Massachusetts Residents, 2011

Fatal and Nonfatal Injury Overview

Among MA residents in 2011,

- There were a total of 3,072 injury deaths and 74,361 hospital stays and 717,689 ED visits for nonfatal injuries.
- Unintentional injuries accounted for 71% of injury deaths, 77% of injury hospital stays and 91% of injury ED visits.
- Approximately one in four injury deaths (26%) and one in ten injury-related hospital stays (10%) involved a traumatic brain injury.
- Falls among MA adults ages 65 and over accounted for about one-quarter (24%) of unintentional injury deaths and over one-third (39%) of hospital stays for unintentional injury.



Table 1. Fatal and Nonfatal Injuries among MA Residents, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age-adjusted per 100,000 MA residents					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	3,072	43.0	74,361	1,024.2	717,689	11,093.4
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	794	10.9	7,770	108.8	63,248	975.8
All Poisoning/overdoses (OD)	965	14.2	8,517	125.6	16,345	254.5
Drug poisoning/OD ²	844	12.5	7,982	117.7	11,307	175.7
Opioid poisoning/OD ³	642	9.7	1,720	24.8	2,967	45.5
Firearms	252	3.7	343	5.2	403	6.1
Unintentional	2,192	30.2	57,470	780.8	652,648	10,079.5
Fall-related	587	7.3	32,856	429.7	192,933	2,919.2
Falls among persons 65+	517	49.8	22,301	2,228.6	44,046	4,562.7
Motor vehicle traffic-related	371	5.3	4,145	60.2	74,281	1,135.7
Motor vehicle occupant ⁴	244	3.5	2,719	39.4	67,171	1,027.3
Motorcyclist	44	0.7	569	8.2	2,176	32.9
Pedestrian ⁵	87	1.2	750	11.0	4,036	61.8
Pedal Cyclist ⁵	7	0.1 ¹	668	10.0	8,332	134.9
Drowning/submersion	40	0.6	48	0.8	100	1.7
Fire/burn	28	0.4	577	8.1	8,890	139.1
Suicide/self-inflicted	577	8.3	4,857	73.6	6,587	102.2
Homicide/assault	201	3.0	2,302	35.3	24,758	382.9

1. Rates based on counts of less than 20 may be unstable.

2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

3. Includes prescription pain-killers, heroin, methadone and other opioids. May overlap with drug poisoning/OD.

4. Includes drivers, passengers and unspecified persons.

5. Due to motor vehicle or other causes.



Injuries Among Massachusetts Residents, 2011

Injury Rates by Sex

- Males generally have higher injury rates than females. In 2011, death rates for males compared to females in Massachusetts were more than:
 - 5x higher for homicide (5.0 vs. 1.1 per 100,000)
 - 3x higher for suicide (13.1 vs. 4.0 per 100,000) and
 - 2x higher for unintentional injury deaths (42.1 vs. 19.6 per 100,000).
- The greatest differences in injury rates by sex were for firearm injuries (all intents). Compared to females, male injury rates were 10x higher for firearm deaths (7.0 vs. 0.7 per 100,000) and 14x higher for firearm-related hospital stays (9.9 vs. 0.7 per 100,000).
- Males also had higher rates of fatal and nonfatal traumatic brain injury, motorcyclist and pedal cyclist injuries than females.



Table 2. Injury Rates for MA Residents by Sex, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age-adjusted per 100,000 MA residents					
	Males (n=2,023)	Females (n=1,049)	Males (n=35,517)	Females (n=38,844)	Males (n=382,737)	Females (n=334,937)
TOTAL INJURIES	62.1	25.7	1,101.2	935.8	12,215.5	9,952.2
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	17.0	5.5	135.4	83.7	1,084.1	862.2
All Poisoning/overdoses (OD)	20.0	8.7	121.7	129.3	269.4	239.8
Drug poisoning/OD ²	17.2	8.0	112.5	122.8	179.9	171.7
Opioid poisoning/OD ³	13.6	5.8	28.7	21.7	60.6	30.8
Firearms	7.0	0.7	9.9	0.7	11.1	1.2
Unintentional	42.1	19.6	825.6	721.2	11,039.8	9,098.5
Fall-related	9.1	6.0	394.6	444.4	2,860.3	2,941.0
Falls among persons 65+	61.4	42.4	1,817.4	2,479.9	3,811.7	5,093.6
Motor vehicle traffic-related	7.9	2.9	74.8	46.5	1,070.1	1,201.5
Motor vehicle occupant ⁴	4.9	2.2	44.2	34.9	918.3	1,135.0
Motorcyclist	1.3	--- ¹	15.1	1.7 ¹	56.2	10.4
Pedestrian ⁵	1.7	0.8	12.4	9.7	73.4	50.6
Pedal Cyclist ⁵	0.2 ¹	0.0	16.2	4.1	203.3	66.8
Drowning/submersion	0.9	0.3 ¹	1.0 ¹	0.6	2.1	1.2
Fire/burn	0.4 ¹	0.4 ¹	10.1	6.2	144.3	133.8
Suicide/self-inflicted	13.1	4.0	65.9	81.4	83.2	121.3
Homicide/assault	5.0	1.1	55.7	15.4	475.8	291.9

1. Rates based on counts of less than 20 may be unstable. Rates are not calculated for fewer than 5 deaths.

2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

3. Includes prescription pain-killers, heroin, methadone and other opioids. May overlap with drug poisoning/OD.

4. Includes drivers, passengers and unspecified persons.

5. Due to motor vehicle or other causes.



Injuries Among Massachusetts Residents, 2011

MA Injury Rates by Race and Ethnicity, 2011

Note: Race and ethnicity are not risk factors for injury per se. Injury rates by race and ethnicity can help identify populations at greater risk for specific injuries, however.

- Of the leading causes of injury death in MA in 2011, injuries with the greatest variation in death rates by race/ethnicity were homicides, firearm injuries and poisoning/overdoses (Table 3).
- Of the leading causes of injury-related hospital stays in MA in 2011, injuries with the greatest variation in rates by race/ethnicity were assaults, firearm injuries and unintentional fall injuries (Table 4).

Table 3. Death Rates for Selected Injuries by Race/Ethnicity, MA Residents, 2011

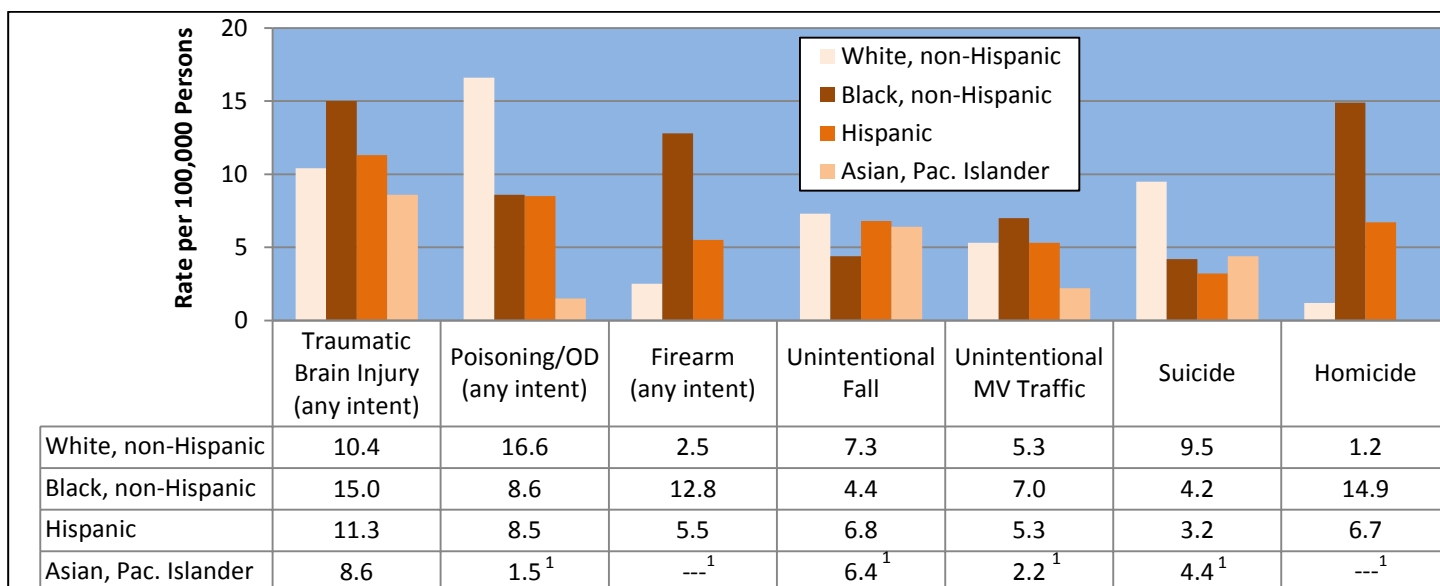
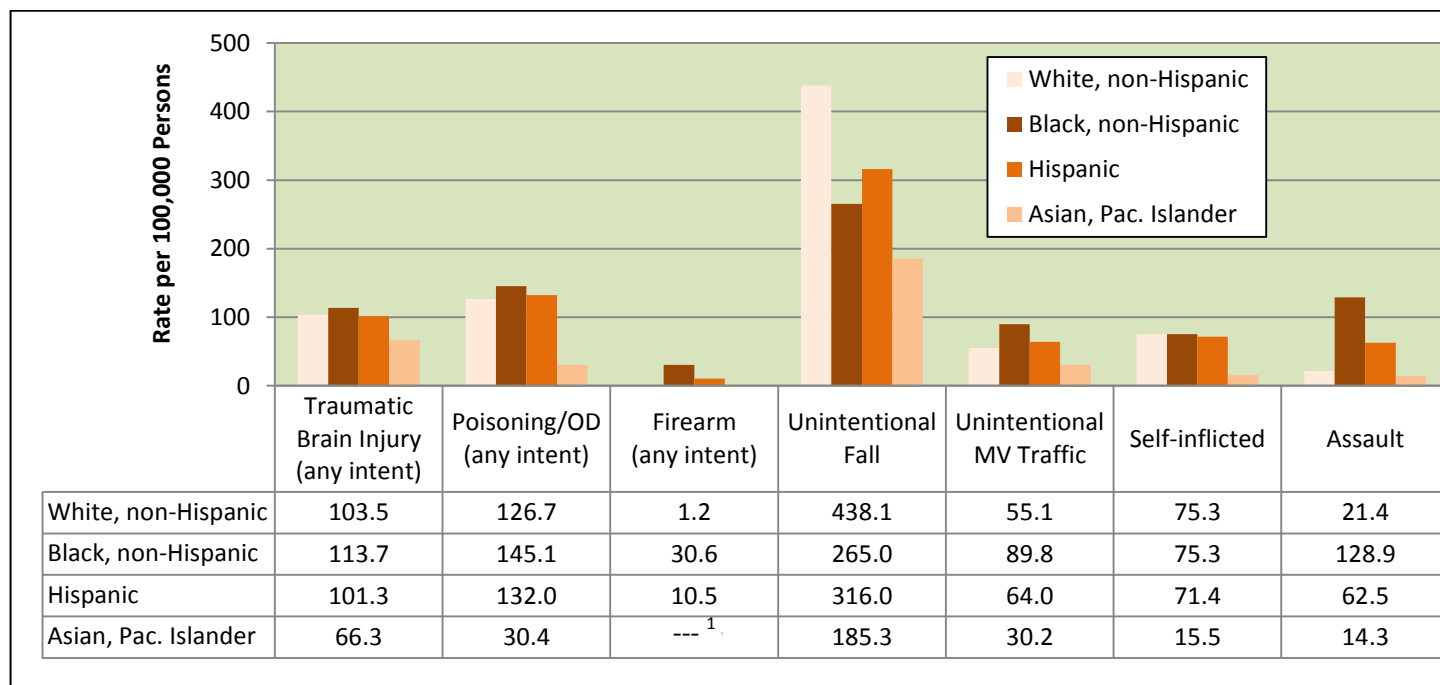


Table 4. Hospital Stay Rates for Selected Nonfatal Injuries by Race/Ethnicity, MA Residents, 2011



1. Rates based on counts of less than 20 may be unstable. Rates are not calculated for fewer than 5 deaths or 11 nonfatal injuries.



Injuries Among Massachusetts Residents, 2011

Injury Costs

The true cost of injuries, which include physical and emotional suffering, cannot be measured. Financial and other costs that can be estimated, however, provide other indicators of the burden of injury in Massachusetts.

- **Years of Potential Life Lost (YPLL):** As a result of injury deaths that occurred in 2011, Massachusetts residents lost an estimated 52,772 years of life prior to age 65. (*CDC WISQARS*)
- **Work Loss Costs:** In addition, deaths of Massachusetts residents due to injuries in 2011 were associated with an estimated \$3.3 billion in lifetime work loss costs. (*CDC WISQARS*)

Table 5. Hospital Charges for Fatal and Nonfatal Injuries, MA Residents, 2011

	Injury Cases ¹ (N)	Hospital Stay Charges	ED Visit Charges	Total Charges
TOTAL INJURIES	795,523	\$1,983,275,733	\$1,053,086,731	\$3,036,362,464
Selected Injuries (regardless of intent; categories may overlap with those below)				
All Poisoning/overdoses (OD)	25,307	\$142,656,292	\$29,464,660	\$172,120,952
Drug poisoning/OD ²	19,702	\$131,750,888	\$23,615,649	\$155,366,537
Opioid poisoning/OD ³	4,820	\$34,979,030	\$5,733,963	\$40,712,993
Firearms	852	\$20,595,528	\$1,802,014	\$22,397,542
Traumatic Brain Injury	71,651	\$289,159,243	\$168,942,739	\$458,101,982
Unintentional	712,692	\$1,513,464,746	\$929,627,939	\$2,443,092,685
Fall-related	227,107	\$840,399,459	\$350,277,139	\$1,190,676,598
Falls among persons 65+	67,412	\$566,101,955	\$114,534,515	\$680,636,470
Motor vehicle traffic-related	78,700	\$185,930,008	\$136,796,209	\$322,726,217
Motor vehicle occupant ⁴	70,079	\$108,698,270	\$116,997,295	\$225,695,565
Motorcyclist	2,774	\$32,301,250	\$6,612,357	\$38,913,607
Pedestrian ⁵	4,840	\$41,342,528	\$10,595,525	\$51,938,053
Pedal Cyclist ⁵	9,011	\$17,401,632	\$16,059,804	\$33,461,436
Drowning/submersion	163	\$1,076,684	\$233,894	\$1,310,578
Fire/burn	9,495	\$19,150,421	\$8,105,255	\$27,255,676
Suicide/self-inflicted	11,746	\$88,078,014	\$16,048,055	\$104,126,069
Homicide/assault	27,169	\$66,786,292	\$53,905,993	\$120,692,285

1. Transfers to another hospital and in-hospital deaths are included in these analyses, therefore these counts may differ from nonfatal injury counts in this report.

2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

3. Includes prescription pain-killers, heroin, methadone and other opioids. May overlap with drug poisoning/OD.

4. Includes drivers, passengers and unspecified persons.

5. Due to motor vehicle or other causes.

Hospital charges represent initial charges by acute care hospitals and may not reflect actual costs or amounts paid. Such charges do not include the cost of outpatient medical care, rehabilitation or long-term nursing care.

- In 2011, MA residents incurred over \$3 billion in charges for injury-related hospital stays and ED visits. Eighty percent of such charges, or \$2.4 billion, were associated with unintentional injuries.
- Hospital charges associated with unintentional fall injuries totaled \$1.2 billion, of which 57% (\$681 million) were associated with fall injuries among adults ages 65 and older.
- Hospital charges associated with traumatic brain injuries (TBI) totaled \$458 million. Nearly half (49%) of these charges were associated with fall injuries and 22% with MV traffic injuries.



Injuries Among Massachusetts Residents, 2011

Injuries by Age Group

Injuries to MA Infants and Children Ages 0 to 14 Years, 2011

- In 2011, there were 29 injury deaths in this age group, of which 17 were due to unintentional injuries (59%), six were homicides (21%) and five were suicides (17%).
- Nine MA children ages 0-14 drowned in 2011, making drowning the leading cause of injury death in this age group. Children ages 0-14 also had the highest hospital stay and ED visit rates for near-drowning of any age group, with a total of 66 such events.
- Unintentional falls were the leading cause of injury-related hospital stays (n = 1,215) and ED visits (n = 43,052), although no deaths from unintentional falls were reported in this age group.
- Rates of traumatic brain injury (TBI) were particularly high among MA children ages 0-14. One in five (19%) injury-related hospital stays and one in ten (12%) injury-related ED visits in this age group – or nearly 16,000 visits - involved a TBI.



Table 6. Injuries to Children Ages 0-14 Years, MA Residents, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age specific per 100,000 MA residents in this age group					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	29	2.5	3,523	306.5	131,304	11,423.0
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	5	0.4	663	57.7	15,328	1,333.5
All Poisoning/overdoses	4	--- ¹	324	28.2	2,487	216.4
Firearms	1	--- ¹	<11 ¹	--- ¹	<11 ¹	--- ¹
Unintentional	17	1.5	3,026	263.3	122,513	10,658.2
Fall-related	0	0.0	1,215	105.7	43,052	3,745.4
Motor vehicle traffic-related	2	--- ¹	187	16.3	4,985	433.7
Motor vehicle occupant ²	2	--- ¹	73	6.4	4,340	377.6
Pedestrian ³	1	--- ¹	99	8.6	558	48.5
Pedal Cyclist ³	0	0.0	143	12.4	2,941	255.9
Drowning/submersion	9	0.8	23	2.0	43	3.7
Fire/burn	0	0.0	36	3.1	1,566	136.2
Suicide/self-inflicted	5	0.4	86	7.5	450	39.1
Homicide/assault	6	0.5	90	7.8	1,060	92.2

1. Rates are not calculated on less than 5 deaths or 11 nonfatal injuries. Nonfatal injury counts less than 11 are suppressed due to data confidentiality guidelines.

2. Includes drivers, passengers and unspecified persons.

3. Due to motor vehicle or other causes.



Injuries Among Massachusetts Residents, 2011

Injuries to MA Youth and Young Adults Ages 15 to 24 Years, 2011

- In 2011, there were 339 injury deaths in this age group, over half of which (54%, n = 183) were due to unintentional injuries, one in four (24%, n = 82) were homicides and one in five (20%, n = 67) were suicides. In addition, MA youth and young adults ages 15-24 sustained nonfatal injuries resulting in 5,804 hospital stays and 134,454 ED visits.
- Motor vehicle (MV)-related incidents, which include collisions with pedestrians and pedal cyclists, were the leading cause of unintentional injury death in this age group, accounting for half (50%, n = 91) of such deaths.
- Firearms accounted for one in four (23%) injury deaths in this age group. Of these 78 firearm-related deaths, 86% were homicides (n = 67) and 13% were suicides (n = 10).



Table 7. Injuries to Youth and Young Adults Ages 15-24 Years, MA Residents, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age specific per 100,000 MA residents in this age group					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	339	36.3	5,804	620.7	134,454	14,378.1
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	116	12.4	824	88.1	12,434	1,329.7
All Poisoning/overdoses (OD)	76	8.1	1,219	130.4	3,818	408.3
Drug poisoning/OD ²	73	7.8	1,150	123.0	2,830	302.6
Opioid poisoning/OD ³	67	7.2	200	21.4	727	77.7
Firearms	78	8.3	191	20.4	184	19.7
Unintentional	183	19.6	3,391	362.6	115,778	12,381.0
Fall-related	6	0.6 ¹	689	73.7	20,219	2,162.2
Motor vehicle traffic-related	91	9.7	882	94.3	19,127	2,045.4
Motor vehicle occupant ⁴	68	7.3	619	66.2	17,345	1,854.8
Motorcyclist	7	0.7 ¹	95	10.2	523	55.9
Pedestrian ⁵	16	1.7 ¹	136	14.5	945	101.1
Pedal Cyclist ⁵	0	0.0	110	11.8	1,864	199.3
Drowning/submersion	3	--- ¹	<11 ¹	--- ¹	18	1.9 ¹
Fire/burn	0	0.0	51	5.5	1,688	180.5
Suicide/self-inflicted	67	7.2	1,032	110.4	2,490	266.3
Homicide/assault	82	8.8	687	73.5	8,688	929.1

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2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

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Injuries Among Massachusetts Residents, 2011

Injuries to MA Adults Ages 25 to 44 Years, 2011

- In 2011, there were 807 injury deaths in this age group, of which two thirds (65%, n = 527) were due to unintentional injuries, one in four (23%, n = 185) were suicides and 8% were homicides (n = 68). In addition, MA adults ages 25-44 sustained nonfatal injuries resulting in 11,820 hospital stays and 212,648 ED visits.
- Poisonings/overdoses were the leading cause of injury death (n = 427) and hospital stays (n = 2,884) in this age group. Three out of four (76%, n = 325) of these fatal overdoses involved opioids, which include prescription painkillers and heroin.
- Suicide was the 2nd leading cause of injury death among MA adults ages 25 to 44. There were nearly three times as many suicides as homicides in this age group in 2011 (185 vs. 68).



Table 8. Injuries to Adults Ages 25-44 Years, MA Residents, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age specific per 100,000 MA residents in this age group					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	807	46.4	11,820	681.8	212,648	12,266.3
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	125	7.2	1,027	59.2	12,912	744.8
All Poisoning/overdoses (OD)	427	24.6	2,884	166.4	5,642	325.5
Drug poisoning/OD ²	391	22.6	2,742	158.2	4,132	238.3
Opioid poisoning/OD ³	325	18.7	608	35.1	1,577	91.0
Firearms	79	4.6	121	7.0	156	9.0
Unintentional	527	30.4	7,134	411.5	189,817	10,949.4
Fall-related	10	0.6 ¹	2,105	121.4	39,496	2,278.3
Motor vehicle traffic-related	98	5.7	1,086	62.6	29,058	1,676.2
Motor vehicle occupant ⁴	60	3.5	720	41.5	26,509	1,529.1
Motorcyclist	21	1.2	195	11.2	947	54.6
Pedestrian ⁵	19	1.1 ¹	143	8.2	1,256	72.5
Pedal Cyclist ⁵	1	--- ¹	122	7.0	1,855	107.0
Drowning/submersion	9	0.5 ¹	<11 ¹	--- ¹	17	1.0 ¹
Fire/burn	5	0.3 ¹	123	7.1	3,058	176.4
Suicide/self-inflicted	185	10.7	2,080	120.0	2,497	144.0
Homicide/assault	68	3.9	943	54.4	10,658	614.8

1. Rates are not calculated on less than 5 deaths or 11 nonfatal injuries. Rates based on counts of less than 20 may be unstable. Nonfatal injury counts less than 11 are suppressed due to data confidentiality guidelines.

2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

3. Includes prescription pain-killers, heroin, methadone and other opioids. May overlap with drug poisoning/OD.

4. Includes drivers, passengers and unspecified persons.

5. Due to motor vehicle or other causes.



Injuries Among Massachusetts Residents, 2011

Injuries to MA Adults Ages 45 to 64 Years, 2011

- In 2011, there were 903 injury deaths, of which the majority (62%, n = 557) were due to unintentional injuries, over one in four (29%, n = 258) were suicides and 4% were homicides (n = 34). In addition, MA adults ages 45-64 sustained nonfatal injuries resulting in 18,731 hospital stays and 157,939 ED visits.
- Poisoning/overdose was the leading cause of injury death among MA adults ages 45-64. Of these 410 fatal overdoses, over half (58%, n = 239) involved opioids, which include prescription painkillers and heroin.
- MA adults ages 45-64 had the highest suicide rate (14.0 per 100,000) compared to other age groups. There were 258 suicides among MA residents ages 45-64, making suicide the 2nd leading cause of injury death in this age group.



Table 9. Injuries to Adults Ages 45-64 Years, MA Residents, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age specific per 100,000 MA residents in this age group					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	903	48.9	18,731	1,013.9	157,939	8,549.0
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	184	10.0	1,724	93.3	11,244	608.6
All Poisoning/overdoses (OD)	410	22.2	2,937	159.0	3,426	185.4
Drug poisoning/OD ²	346	18.7	2,756	149.2	2,232	120.8
Opioid poisoning/OD ³	239	12.9	696	37.7	568	30.7
Firearms	56	3.0	24	1.3	49	2.7
Unintentional	557	30.1	14,036	759.7	146,471	7,928.3
Fall-related	54	2.9	6,546	354.3	46,120	2,496.4
Motor vehicle traffic-related	95	5.1	1,163	63.0	16,851	912.1
Motor vehicle occupant ⁴	57	3.1	671	36.3	15,069	815.7
Motorcyclist	13	0.7 ¹	235	12.7	598	32.4
Pedestrian ⁵	25	1.4	213	11.5	982	53.2
Pedal Cyclist ⁵	4	--- ¹	237	12.8	1,483	80.3
Drowning/submersion	11	0.6 ¹	<11 ¹	--- ¹	<11 ¹	--- ¹
Fire/burn	10	0.5 ¹	229	12.4	2,025	109.6
Suicide/self-inflicted	258	14.0	1,483	80.3	1,069	57.9
Homicide/assault	34	1.8	510	27.6	4,075	220.6

1. Rates are not calculated on less than 5 deaths or 11 nonfatal injuries. Rates based on counts of less than 20 may be unstable. Nonfatal injury counts less than 11 are suppressed due to data confidentiality guidelines.

2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

3. Includes prescription pain-killers, heroin, methadone and other opioids. May overlap with drug poisoning/OD.

4. Includes drivers, passengers and unspecified persons.

5. Due to motor vehicle or other causes.



Injuries Among Massachusetts Residents, 2011

Injuries among MA Adults Ages 65 and Older, 2011

- In 2011, there were 993 injury deaths in this age group, as well as 34,483 hospital stays and 81,342 ED visits for nonfatal injuries. The vast majority of these deaths (91%) and nonfatal injury visits (92%) were due to unintentional injuries.
- Falls were the leading cause of unintentional injury among MA adults ages 65+, accounting for the majority of unintentional injury deaths (57%), hospital stays (74%) and ED visits (56%) in this age group.
- MA adults ages 65+ had the highest rate of TBI-associated death and hospital stays compared to other age groups.
- MA adults ages 65+ also had the highest rates of pedestrian deaths and hospital stays compared to other age groups.



Table 10. Injuries to Adults Ages 65 and Older, MA Residents, 2011

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age specific per 100,000 MA residents in this age group					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	993	107.7	34,483	3,740.5	81,342	8,823.4
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	364	39.5	3,532	383.1	11,330	1,229.0
All Poisoning/overdoses (OD)	47	5.1	1,153	125.1	972	105.4
Drug poisoning/OD ²	29	3.1	1,063	115.3	646	70.1
Opioid poisoning/OD ³	9	1.0 ¹	203	22.0	50	5.4
Firearms	38	4.1	<11 ¹	--- ¹	<11 ¹	--- ¹
Unintentional	907	98.4	29,883	3,241.5	78,067	8,468.2
Fall-related	517	56.1	22,301	2,419.1	44,046	4,777.8
Motor vehicle traffic-related	85	9.2	827	89.7	4,260	462.1
Motor vehicle occupant ⁴	57	6.2	636	69.0	3,908	423.9
Motorcyclist	3	--- ¹	40	4.3	59	6.4
Pedestrian ⁵	26	2.8	159	17.2	295	32.0
Pedal Cyclist ⁵	2	--- ¹	56	6.1	189	20.5
Drowning/submersion	8	0.9 ¹	<11 ¹	--- ¹	13	1.4 ¹
Fire/burn	13	1.4 ¹	138	15.0	553	60.0
Suicide/self-inflicted	62	6.7	176	19.1	81	8.8
Homicide/assault	11	1.2 ¹	72	7.8	277	30.0

1. Rates are not calculated on less than 5 deaths or 11 nonfatal injuries. Rates based on counts of less than 20 may be unstable. Nonfatal injury counts less than 11 are suppressed due to data confidentiality guidelines.

2. Excludes poisoning from alcohol, gases, pesticides and other chemicals. May overlap with opioid poisoning/OD.

3. Includes prescription pain-killers, heroin, methadone and other opioids. May overlap with drug poisoning/OD.

4. Includes drivers, passengers and unspecified persons.

5. Due to motor vehicle or other causes.



Injuries Among Massachusetts Residents, 2011

Injury Prevention in Massachusetts

While we have made tremendous progress in the field of injury prevention over the past several decades, this report highlights that there is still work to be done. Injuries are largely preventable events. The public health approach to preventing injury is similar to that for preventing disease. Injuries are not simply “acts of fate”. The Massachusetts Department of Public Health’s (MDPH) Division of Violence and Injury Prevention works closely with our internal partners, other state agencies and external institutions and organizations to advance practices and policies that both protect Massachusetts residents from injury and reduce injury severity. One approach to violence and injury prevention utilizes a framework is sometimes referred to as “the four E’s” of injury prevention. These include:

- **Environmental Design and Engineering.** Adoption of safer products and environmental designs can greatly reduce one’s risk of injury.
- **Enactment and Enforcement of Policies.** Laws, regulations and institutional policies can promote safe behaviors or responses and prevent injury.
- **Education.** Educating the public and professionals can change behaviors and reduce injuries.
- **Emergency Medical Services.** Ensuring a high quality trauma management system so that individuals who are injured are transported to facilities with the most appropriate care in order to reduce deaths and improve outcomes after an injury.

The data described in this bulletin provides useful information for identifying the reasons people are injured and the populations where the greatest burden of injury lies in Massachusetts. Through a concerted effort, we can use this data to inform efforts to advance the latest best practices and policies for injury prevention in Massachusetts and to improve the quality and length of life for many citizens each year.

Massachusetts Injury Prevention Activities

In 2013, the MDPH Injury Prevention and Control Program released a Strategic Plan for the Prevention of Unintentional Injury. This plan prioritizes injury focus areas and describes strategies that MDPH and its partners are implementing to address these areas. Some key focus areas are outlined below:

Falls Among Older Adults

MDPH strategies to prevent falls among older adults include supporting prevention infrastructure and stakeholders through the MA Falls Prevention Coalition; prioritizing falls prevention for Prevention and Wellness Trust Fund grantees; promoting community-based programs to improve strength and balance; promoting fall risk assessments by primary care providers; developing and disseminating educational materials; convening the MA Commission on Falls Prevention to draft policy and programming recommendations; and improving Massachusetts data on fall injuries.

Opioid Overdoses

In March, 2014, Governor Patrick declared a Public Health Emergency related to opioid overdoses in MA. This enabled the MDPH Commissioner and Public Health Council to permit all first responders to carry and administer naloxone, which reverses opioid overdoses; facilitate access to naloxone through standing orders at pharmacies; accelerate enrollment of prescribers into the MA Prescription Monitoring Program; allocate \$20 million for prevention and treatment services; and support further recommendations by the multi-agency Opioid Task Force.



Injuries Among Massachusetts Residents, 2011

Massachusetts Injury Prevention Activities (cont.)

Motor Vehicle Crashes

Occupant protection is a priority area of the MDPH's Strategic Plan for Unintentional Injury Prevention. Specific strategies include supporting prevention infrastructure and stakeholders through the Partnership for Passenger Safety (PPS), a coalition of transportation safety advocates from across the state; disseminating relevant state data, research findings and evidence-based strategies to prevention partners; participating in the planning and implementation of the MA Strategic Highway Safety Plan (SHSP); partnering with the Massachusetts Department of Transportation/Registry of Motor Vehicles (MassDOT/RMV) to improve implementation of the Junior Operators License (JOL) law; and developing a Safe Driving Policy for MDPH employees.

Child Drowning

The Massachusetts State Child Fatality Review Team considers drowning prevention a key focus area of preventable deaths. As a result of drowning fatality reviews by this team, MDPH promotes a range of specific prevention strategies to the public and key stakeholders, including continuous supervision of children while in or near water, swimming lessons for all children, child-proof barriers for all backyard pools, use of personal flotation devices by children in boats, and learning CPR and other steps to take in the event of a possible or near-drowning.

Youth Sports Concussions

Following passage of sports concussions legislation in 2010, MDPH worked with key stakeholders to ensure that these injuries are identified and managed appropriately among students at MA middle and high schools. MDPH has developed regulations requiring standardized procedures for students, coaches, school staff, parents and medical professionals on prevention, training, management and return to activity decisions, and is actively implementing these policies within MA middle and high schools.

Resources

For further information about injury prevention efforts in Massachusetts, contact:

Injury Prevention and Control Program (IPCP)

Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
(617) 624-5413

www.mass.gov/dph/injury

This report and other MA injury data are available on-line at the Injury Surveillance Program website. Custom data analysis can also be requested by contacting the Injury Surveillance Program directly at:

Injury Surveillance Program (ISP)

Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: (617) 624-5648 ; e-mail: MDPH-ISP@state.ma.us

www.mass.gov/dph/isp



Injuries Among Massachusetts Residents, 2011

Data Sources and Notes

Deaths: Registry of Vital Records and Statistics (RVRS), MA Department of Public Health (MDPH). Includes MA residents who died in or out-of-state; non-MA residents are excluded. Deaths are compiled and reported by calendar year.

Nonfatal Injuries and Hospital Charges: MA Inpatient Hospital Discharge, Outpatient Observation Stay and Emergency Department Discharge databases, MA Center for Health Information and Analysis. These databases are compiled and reported by fiscal year (Oct. 2010 – Sept. 2011). Data do not include non-MA residents or MA residents who received care out-of-state.

Estimated Years of Potential Life Lost and Lifetime Work Loss Costs: Web-based Injury Statistics Query and Reporting System (WISQARS) Fatal Injury Data and Cost of Injury Reports, Centers for Disease Control and Prevention.

Population: Annual Estimates of the Resident U.S. Population by Single Year of Age and Sex: April 1, 2010 to July 1, 2012, U.S. Census Bureau (Released June 2013).

Counts and Rates: Due to confidentiality guidelines, counts and rates based on less than 11 nonfatal injuries are suppressed. Rates based on counts of less than 20 may be unstable and should be interpreted with caution; rates are not calculated on counts of less than 5 deaths. All rates are age-adjusted rates per 100,000 MA residents unless otherwise noted. Tables by age group (tables 5-9) use age-specific rates.

Injury Definitions

MDPH recently modified its injury definitions to align more closely with national standards. Therefore data from this report should not be compared with previous injury reports or the MA Registry of Vital Records and Statistics Death Report 2011.

Injury Deaths: Injury deaths are defined as those with an ICD-10 code of V01-Y36, Y85-Y87, Y89 or U01-U03 in the underlying cause of death field. Adverse medical/surgical effects and late entry deaths are excluded.¹

Injury-related Hospital Stays: Hospital stays include hospital discharges and observation stays; in-hospital deaths and transfers are excluded. Injury cases are defined as those with an ICD-9-CM code of 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59 or 995.80-995.85 in *any* diagnosis field. Adverse medical/surgical effects are excluded.¹ In contrast with CDC guidelines, the MA injury definition searches all diagnosis fields for these codes, rather than just the principal diagnosis field.

Injury-related Emergency Department (ED) Visits: Injury cases in ED data are defined as those with an ICD-9-CM code of 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59 or 995.80-995.85 in the *principal* diagnosis field, (which excludes adverse medical/surgical effects), OR an external-cause-of-injury (E-code) of E800-E869, E880-E929, or E950-E999 in *any* diagnosis field.¹ Deaths are excluded.

Injury Cause and Intent: Injury deaths are classified according to CDC guidelines using ICD-10 underlying cause of death codes.² Nonfatal injuries are classified by cause and intent according to CDC guidelines using the first valid ICD-9-CM E-code.³ Drug and opioid poisoning definitions are not included in these guidelines.

Drug poisonings/overdoses (ODs): Fatal drug poisoning/ODs are deaths with an ICD-10 underlying cause code of X40-X44, X60-X64, X85 or Y10-Y14.¹ Nonfatal drug poisoning/ODs are poisonings cases with an ICD-9-CM diagnosis code of 960-979 OR an E-code of E850-E858, E950.0-E950.5, E962.0 or E980.0-E980.5 in any diagnosis field.⁴

Opioid poisonings/ODs: Fatal opioid poisonings/ODs are poisoning deaths with an ICD-10 code of T40.0-T40.4 or T40.6 in any contributing cause field. Nonfatal opioid poisonings/ODs are nonfatal poisoning cases with an ICD-9-CM diagnosis code of 965.00-965.02 or 965.09 OR an E-code of E850.0-E850.2 in any diagnosis field.⁴

1. Thomas KE, Johnson RL. *State injury indicator report: Instructions for preparing 2011 data*. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2013.

2. See ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/injury/sascodes/icd10_external.xls

3. See http://www.cdc.gov/injury/wisqars/ecode_matrix.html

4. Injury Surveillance Workgroup 7. *Consensus recommendations for national and state poisoning surveillance*. The Safe States Alliance. Atlanta, GA. 2012.

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